



VibroAcoustic Therapy

Many of us may remember the experiment with 2 tuning forks when they attended school laboratories. When one was struck, it set the other on in sympathetic vibration. Sound is a physical thing, as we are reminded every time someone's bass notes come trundling merrily through house walls. We all know loud, harsh sound can be bad for us; what we don't so often think about is that sound can also have healing properties.

Music has been a common form of therapy in many cultures over the centuries. Dr Richard Williams suggests that 'perhaps the best-known application of sound in the healing arts has been in the field of music therapy'.

As far back as knowledge extends, low frequency sound has been used in various forms to cause physiologic and psychologic effects. From the chant of Tibetan monks, to Gregorian chant, to the Music of African tribes, and Australian aborigines; low frequency sound has been used to calm, to excite, to relieve anxiety, to motivate warriors, and to induce relaxation. Vibroacoustics is a scientific method of applying low frequency stimulation to the human body in such a way as to obtain desired emotional or physical effects. It may be thought of as the science, which takes the active ingredients out of music, concentrates them, and infuses them in pure form to motivate or heal.

Vibroacoustics from vibro-to *vibrate*-and acoustics---to *hear*-is an innovative technology in which music and/or sound vibrations are *felt* as well as *heard*. The sound vibrations are administered through specially-designed transducers built into a recliner, chair, bedpad, etc. There are numerous benefits to health and well-being from the experience of feeling the sound vibrations as the client relaxes on a vibroacoustic equipment.

The term VibroAcoustic Therapy was first applied by Olav Skille to describe the use of low frequency sound and music applied as a tactile experience in the treatment of various physical and psychological conditions (1). The term has recently been defined as "*A form of receptive music therapy employing the physical properties of sound and vibration wherein pulsed sinusoidal, low frequency sound between 30 Hz and 120 Hz combined with relaxing music is played through transducers built into a bedpad or chair. Patients lying on a vibroacoustic*

unit experience a gentle, internal vibration in different parts of their body, depending on the frequency used.”

During VibroAcoustic Therapy sinusoidal sound (or sine) waves are used because of the purity of their sound. In theory there is no limit to the amount of tones created by coherent sine waves. Such high frequencies are found in the resonances of cell membranes and intracellular microtubules. Biological tissue appears capable of storing energy, which can be released later when needed for high energy tasks. VAT relaxes our emotional brain (center of fear, amygdala, and center of memory, hippocampus) over autonomic nervous system and that way metabolism is able to go toward normal, because amygdala and hippocampus controls metabolism and also the work of all organs through the sympathetic and parasympathetic nervous system.. Cell vibration actually make cells work, as well as giving them periods of relaxation: scientifically it is classified as a form of exercise, like jogging. This aspect of the therapy is useful for patients who cannot exercise. A number of complementary therapies such as yoga, herbal medicine and acupuncture - to name but a few - are effective in relieving stress; but most require some sort of effort from the patient's side. Acoustic cell vibration does not require any effort at all – it is purely receptive.

The mechanism of vibroacoustics is oscillation of the human nervous system with frequencies and resonance characteristics of various muscle groups. Vibroacoustics combines these resonance frequencies in computer-generated programs. Thousands of clinical research hours have taught us how to use these programs to relax, to stimulate, to relieve pain. Most research in Low Frequency Sound has been carried out in Scandinavia, England, and other parts of Europe. Since 1991 research studies related to Vibroacoustics have been carried out at Harperbury Hospital, Duke University, National Institutes of Health Center for Alternative Medicine, University of Virginia, University of North Carolina (Asheville), Michigan State University (Kalamazoo Campus), etc. Controlled studies have demonstrated highly statistically significant decreases in anxiety, tension, muscle spasticity, arousal states, and dramatic increases in relaxation and sense of well-being. Psychological testing shows that people who receive vibroacoustic treatments generally feel better. The FDA has listed vibroacoustics related equipment as a Class One medical device. The FDA allows the claims of relief of pain, increase of blood circulation, and relaxation.

How does it work?

Administered through comfortable sound furniture, the client is bathed repeatedly with pure, coherent (patterned & harmonious), sinusoidal sound waves. This methodology was designed by Olav Skille 30 years ago. Sine waves, produced by a specially designed computer program, of varying pitch, frequency and tone sweep the body; muscle groups and other organs tingle with vibration in sympathetic harmony as their own resonance frequencies are approached; the effect is like having a massage through the body. The experience is relaxing, as muscle tissue loses tension, blood flow improves and pain is eased.

The therapy usually takes about twenty-three minutes. The subject lies on a specially built bedpad or sits on a recliner while pre-selected low frequency sound is played through transducers. Specific frequencies can be effective at quite precise locations in the body so that the therapist can create programs to treat defined problems in a purposeful way. The sensation of a vibroacoustics treatment, analogous to that of being vibrated, is very different from manual vibration. It is perceived as much more pleasant. The sensation of sine wave stimulation is both pleasing and smooth. A patient should take the therapy at least twice a week during the first 3 months. However, there is no restriction on daily use. The main effect of VAT is a harmonization of the parasympathetic nervous system.

Contraindications

No significant adverse effects have been found. Do not treat patients with heart conditions until permission is given by the patient's physician.

Vibroacoustics has a different approach to healing than medical tradition where the most commonly used nostrums rely on drugs. All drugs have side effects whereas VibroAcoustic Therapy does not have any side effect and can ameliorate pain without clouding the mind.

VibroAcoustic Therapy has experienced widespread use in hospitals, healthcare facilities, wellness programs, education, and corporate organizations as well as being used extensively in private settings.

To summarize, VibroAcoustic Therapy is an enjoyable experience. It relaxes people and makes people feel good about themselves. It relieves anxiety and pain. It decreases

spasticity. It increases circulation. Cell vibration does this without side effects found in drugs.

Benefits of VibroAcoustic Therapy

Research and clinical programs have reported that vibroacoustics provides a wide variety of mental and physical benefits. VibroAcoustic Therapy has been found to:

- reduce stress
- facilitate the Relaxation Response
- increase quality of life
- decrease the experience of pain
- reduce nausea, headache, anxiety, fatigue and depression
- calm and soothe restless behavior
- relax muscular hyper-tauticity
- improve range of motion
- promote muscle tone
- offer auditory and physical stimulation
- enhance communication skills
- develop sensory awareness
- promote a feeling of calmness
- enhance music appreciation
- Have a marked, but variable, effect on the autonomous nervous system

VibroAcoustic Therapy has multiple benefits including that it:

- is a non-drug, non-invasive approach with no unwanted side effects
- addresses both the physical and psychological aspects
- reduces anxiety and pain
- can be easily and successfully used by trained therapists
- is a one-time, cost-effective, capital expense

Clinical Applications:

Anxiety

Anxiety and tension are common side effects of illness and disease that patients frequently identify and medical personnel must constantly address. Research demonstrates that high anxiety levels inhibit the healing process and perhaps increase susceptibility to cardiac and immunological disorders, among other health problems.

Tension, reported by patients also as anxiety and stress, was one of the symptoms most frequently identified in the National Institute of Health vibroacoustic evaluation of pain and symptom reduction. Among the patients who identified tension as a primary symptom, an average of 54% reduction was reported from a single vibroacoustic session.

Guided Imagery has been empirically demonstrated to be an effective technique in helping individuals to reduce anxiety. One of the limitations of this technique, however, is that highly anxious clients often find it difficult to relax sufficiently to be able to experience a reduction in their symptoms. The use of vibroacoustic methods can enhance relaxation by influencing brainwave frequencies. Vibroacoustic methods have also been shown to be associated with a decrease in blood pressure, pulse rate, and muscle tension, as well as an increase in feelings of health and comfort by allowing individuals to relax, both physically and mentally. Brainwave entrainment can increase the effectiveness of guided imagery and allow clients to benefit from a guided imagery experience which would otherwise elude them.

With clinical results demonstrating 50% reduction of tension in a single session, vibroacoustics clearly provides a significant method for handling tension without drugs or negative side-effects.

Depression

Although pain and depression are not always linked, there is substantial evidence that patients with chronic pain are more susceptible to experience depression, and the depression, may then increasingly exacerbate the pain. In many cases, psychological intervention can benefit patients suffering from both conditions. One advantage for the use of VibroAcoustic Therapy

for the treatment of chronic pain and depression is that both conditions can be addressed with the same protocols.

Stress and Burnout

According to the Estonian physician Riina Raudsik Chronic stress is “over-acidation” of all tissues of organism. Stressed people often develop a vicious circle where their over-acidated gastrointestinal tract makes them ravenous, overeating and the need for storing harmful substances conditions an increase in fatty tissue which in turn begins to limit people’s mobility and the vicious circle closes. Vibroacoustic vibration increase blood circulation and deepens breath reflex. This is transferring more oxygen to the cells, and thereby reduce over-acidation.

Autism

Case studies and programs using VibroAcoustic Therapy have shown successful reduction of muscle tension, anxiety and gastrointestinal problems as well as benefits from increased stimulation and circulation and success in screening out upsetting sounds. On-task behavior, interaction and expressiveness have been reported to increase.

Several experiments on autistic population indicate reduction of hyperactivity, stereotyped behaviors and in general clients become more flexible and expressive.

Developmentally Disabled/Mental Retardation

Vibroacoustic work with the developmentally disabled has been highly successful as stress reduction has positive physical and mental effects and improves quality of life.

The vibroacoustic equipment is a wonderful thing for a lot of patients, especially people with sensory organ impairments. It gives needed sensory input or those who are blind and deaf. Patients those confined to beds or chair, vibroacoustic equipment may be their only option for physical stimulation and sensory awareness. The sound and vibrations makes them more aware of their surroundings and gives them the physical stimulation they need.

The peaceful music combined with the music vibrations calms people and the deep tones relax them, eliminating unwanted behavior and supplies multisensory stimulation.

Cerebral Palsy

Muscle relaxation is an issue with people who have physical disabilities that cause muscle contractions; VibroAcoustic Therapy helps their muscles relax. With spastic conditions following cerebral palsy, vibroacoustic therapy has demonstrated a considerable spasmolytic effect. Alone, or in combination with physiotherapy, the method has given very good results in reducing muscle tone, and increases voluntary control over muscular functions which usually are non-responding, or respond by sending signals to wrong muscle groups. The vibroacoustic equipment adds to clients' quality of life, which is very important.

Insomnia

Anxiety, pain, or depression can often be underlying or complicating factors for insomnia. Patients easily fall asleep during treatment and they have reported that after treatment they have less difficulty in falling asleep at their normal time for retiring and the duration of sleep is longer than they normally experience. This led to specific use as therapy for insomnia. Treatment for insomnia has best effects when it is carried out in the late afternoon.

Pain management

The analgetic effect of VAT is amply described with case stories, but theoretical explanations are few. Dr Ralph Spintge and Ronald Droh at Krankenhaus Hellersen in Lüdenscheid, Germany studied the effect of stress hormones in 40 patients, by use of Radio immuno-assay, and found significant increase in stress hormones Beta endorphin, ACTH and Cortisol. These hormones also have an effect of subjective pain tolerance levels. VAT also stimulates pressure receptors over a large skin area, mimicking skin contact. The soothing effect of skin contact is well known.

COPD

A complex mixture of lung/bronchial dysfunctions. The vibrations of VAT will vibrate lung tissue, and thereby change the viscosity of lung phlegm, which, consequently, will be easier expectorated. The spasmolytic effect of VAT also has a spasmolytic effect on bronchial spasms, thereby enhancing passage of air in and out of the lungs.

Irregular Bowel Syndrome

Constipation problems often respond positively to bowel vibrations transferred to the intestines via sound conduction through body tissue. The vibrations may have an effect on the peristaltic movements of the bowels, and we can suppose that also the mucosa lining the intestines may be absorbing more fluids from the surrounding watery tissues.

- Hospital and clinics
- Occupational health service and preventive health care
- Sports medicine
- General rehabilitation
- Rehabilitation of disabled and invalids
- Psychotherapy and psychiatric treatment
- Rehabilitation of drug and alcohol abuse
- Pain management
- Stress control
- geriatric rehabilitation
- insomnia

With the results of more than 25 years of research and development, the treatment is now being used widely in over 100 hospitals, psychiatric hospitals, old people's homes, health clubs, alternative and complementary clinics and private therapy studios in Finland, England, Germany, Norway, Denmark, Sweden, Croatia, Russia, Japan, China and the USA. India now also has three VAT centres, all in Kolkata : one at Step One Foundation for conducting research studies, one at Nirmala Kennedy Centre of Missionaries of Charity and another one at New Life Nursing Home. VAT equipment is now approved as medical device in several countries. Different manufacturers in UK, USA, Japan, China and Russia have come out with their own versions of vibroacoustic equipment. However, equipment from Multivib AS, Norway is the most original and complete equipment for transfer of single and extremely controlled low frequencies and is being regularly improved and developed by Olav Skille, the inventor of the therapy and promises maximum fruitful results. VibroAcoustic Therapy may be used in medical or educational set-ups.

Finally, in today's world when cost of traditional treatment is rising alarmingly, VibroAcoustic Therapy may be a good alternative add-on for patients' benefit and may provide the quality of life we deserve..

